

## Stillaguamish Basin Near-Term Actions (NTAs) for the 2018-2022 Action Agenda

NTA ID	NTA Title	NTA Description	Owner Organization	Sno-Stilly Alignment	Gap (Y/N)	Regional Priority Approach		
Habitat and Chinook								
2018-0213	Stillaguamish Estuary Habitat and Chinook Resilience Project (Phase I)	The goals of the restoration project are to improve marsh foraging access for juvenile salmon and increase marsh resiliency in the Stillaguamish estuary by increasing freshwater flow and sediment delivery across the delta's seaward edge. Adaptive management actions will be identified using two models: (1) a site-scale allometric channel analysis will determine the number of small blind channels needed for juvenile salmonid foraging access; and, (2) an ecosystem-scale 3D hydrodynamic model will inform the best restoration actions for reducing salinity stress and increasing sediment delivery to the northern estuary under current and future climate conditions. Model results will directly inform restoration design and project construction on TNC-owned land. Monitoring will evaluate project success. Community engagement will occur in collaboration with Floodplains by Design practitioners to build local knowledge and support for future restoration efforts critical for estuarine resilience.	The Nature Conservancy	SSLIO 10.2 Restoration	N-Continuation	EST3.3	CHIN7.1	EST3.4
2018-0218	Stillaguamish Floodplain Acquisition and Restoration	We propose to acquire, protect and restore lands within the Stillaguamish floodplain. This will entail fee simple acquisition of real property, placement of deed restrictions on acquired properties to prevent future development activities, removal/setting back of infrastructure (homes, levees, bank armoring, wells, septic, etc.), controlling of invasive species, planting of native trees and shrubs, and installation of engineered log jams. We have been working for ten years on this effort, in the process acquiring and beginning the restoration of approximately 1000 acres of the Stillaguamish floodplain. Over 7000 acres remain, likely meaning that this effort will continue for decades.	Stillaguamish Tribe of Indians	SSLIO 10.1/10.2 Protect/Restore	N-Continuation	FP3.2	FP3.3	CHIN7.1
2018-0249	North Fork Stillaguamish Integrated Floodplain Management	This NTA will complement the Skykomish, Snohomish River and Estuary and Mainstem Stillaguamish Reach Scale Plans by adding a North Fork Stillaguamish Reach Scale Plan. The plan will add an overview of the planning area, including land use, hydrology, geomorphology, water quality and salmon habitat. This will help define opportunities for multiple benefit projects that address fish, farm and flood risk reduction goals and objectives. The plan will list specific projects that take advantage of these opportunities as well as a funding strategy to help them get implemented. The plan will produce a template for measuring progress and will document critical next steps to help enable and design high priority floodplain projects. The Snohomish and Stillaguamish watersheds have some of the greatest potential for achieving the regional targets associated with the Floodplains, Estuary, Land Cover and Development and the Shoreline Armoring Vital Signs.	Snohomish County	SSLIO 02.1 Integrated Planning	Y-New area	FP2.1		
2018-0291	Warm Beach Pocket Estuary Restoration	1.) Remove the existing tile drain structure which is currently inhibiting anadramous fish access to the stream and impeding natural estuarine water circulation. Pipe removal will fully re-open this area to tidal influence and allow it to return to a functioning pocket estuary. 2.) Realign the stream channel from its current ditch to more closely resemble a natural geometry. Currently, the tile drain is buried at the beach interface. This project would daylight the stream through the entirety of the reach and reconnect the fluvial and marine environments. 3.) Place in-stream large woody debris to encourage natural stream processes (i.e., pool formation) and provide suitable rearing habitat for juvenile salmonids. 4.) Plant the newly established riparian corridor with native vegetation and remove non-native species. This will provide both short- and long-term benefits to the stream (i.e., shading, cycling nutrients, and improving water quality).	Tulalip Tribes	SSLIO 1.2 Nearshore Restoration	Y-New project	CHIN7.1	EST3.3	
2018-0391	Culvert Replacement near 1321 268th St NW	The existing culvert under 268th St NW are twin 18" diameter concrete culverts. These culverts are a fish barrier and limit the movement of salmonids in Secret Creek. In 2016 WSDOT replaced a barrier culvert under SR 532 which is 100-feet D/S of the proposed culvert replacement. Due to limited County funds, culverts that are either failing or causing roadway flooding are addressed first as they are a public safety concern and because this culvert doesn't meet either of those concerns the priority for replacement is lower than other culverts within the County. Past data has shown that Secret Creek is a cold-water input with a good vegetative buffer and would provide good rearing/spawning habitat. Based on the SWIFD fish distribution there are documented coho and presumed cutthroat trout in Secret Creek and at the confluence of Pilchuck Creek (2.3 mi. D/S of this culvert replacement) are documented Chinook and other species. A successful project would be the construction of this culvert.	Snohomish County	SSLIO 10.2 Restoration	N-other work funded	CHIN7.1		
2018-0392	Culvert Replacement on E Sunday Lake Rd and 4th Ave NW	The existing culverts under 4th Ave NW and E Sunday Lake Rd are a fish passage barriers and limit the movement of salmonids along the stream channel for migration/rearing. In 2016 WSDOT replaced a barrier culvert under SR 532 which is U/S of the E Sunday Lake Rd culvert. Due to limited County funds, culverts that are either failing or causing roadway flooding are addressed first as they are a public safety concern and because these culverts don't meet either of those concerns the priority for replacement is lower than other culverts within the County. Past data has shown that Secret Creek is a cold-water input with a good vegetative buffer and would provide good rearing and spawning habitat. Based on the SWIFD fish distribution there are documented coho and presumed cutthroat trout in Secret Creek and at the confluence of Pilchuck Creek (1.4 miles D/S of the proposed culvert replacement) are documented Chinook and other species. Final product would be design plans for construction.	Snohomish County	SSLIO 10.2 Restoration	N-other work funded	CHIN7.1		
2018-0462	Leque Island Estuary Restoration	This project is located on the 250-acre portion of Leque Island that is south of HWY 532. The project area is historic tidal marsh that is currently disconnected from tidal processes by a perimeter dike. Phase 1 construction was completed in summer of 2017, which involved preparing the site for dike removal by filling ditches and excavating new channels. Phase 2 is anticipated for 2019 and will involve removing the perimeter levee to reconnect the tide to the site. In addition to restoration actions, physical and biological parameters will be monitored.	WDFW	SSLIO 10.2 Restoration	N-Continuation	EST3.4	EST3.3	

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2018-0526	North Leque Island Estuary Restoration	Approximately 35 acres of the portion of Leque Island that is North of HWY 532 is historic estuary that is currently surrounded by a perimeter dike. There is one large breach in the dike that was caused by nature approximately 10 years ago that allows tidal inundation of the site, but the tidal flow and sediment processes are muted because there is only one connection to the surrounding marsh. WDFW currently has capital funding and is drafting a design to add connections to the marsh and remove the remainder of the levee. It is unknown if the capital budget amount will be sufficient for construction until the permit-level design is finished and cost estimate completed.	WDFW	SSLIO 10.2 Restoration	N-Continuation	EST3.3	EST3.4	
2018-0590	North Puget Sound Estuary Avian Monitoring	Ecostudies Institute, a nonprofit organization, will collaborate with WDFW to assess the effects of estuarine restoration on bird populations in North Puget Sound. At present, there is a lack of information regarding the effects of restoration actions on birds, which often results in stakeholder conflict over projects. Avian research will be conducted at three restoration sites within the Skagit-Stillaguamish Delta (Fir Island Farm, Leque Island, and Zis a ba), and at 2-3 reference marsh sites (Wiley Slough and 1-2 additional sites). Our results will quantify changes in bird populations over time and enable comparison among multiple restoration and reference sites.	WDFW	SSLIO 10.2 Restoration	Y-New project	EST3.4		
2018-0617	Watershed Engagement for Decision Makers WRIA 5	Moving forward with the resources developed thus far and lessons learned, we are proposing to implement a Watershed Engagement for Decision Makers program in WRIA 5 targeting elected officials and other leaders from Tribes, federal, state, county, and municipal government, and special purpose districts - among others - who represent, serve, and support the Stillaguamish basin. Two (or more) tours of project sites exemplifying on-the-ground projects that improve water quality, salmon habitat, and/or shellfish habitat will be organized and held in WRIA 5 for decision makers lead by local experts in watershed management. One tour will coincide with a shellfish/salmon dinner where decision makers will be able to interact with constituents, the press, and listen to presentations given by project partners about initiatives and projects they are implementing to improve WQ and habitat. Success will be measured by program participation and developing ongoing relationships with decision makers.	Sound Salmon Solutions	SSLIO 10.1/10.2 Protect/Restore	N-Continuation	LDC3.1	EST3.1	FP3.1
2018-0681	USFS Fish Barrier Replacement - Palmer Creek on Forest Service Road 4065	Fish barrier will be replaced with a structure meeting the Forest Service Region 6 Aquatic Organism Passage Guidance.	US Forest Service	SSLIO 10.2 Restoration	N-other work funded	CHIN 2.5		
2018-0684	USFS Road Decommissioning, Storage, and Stormproofing in South Fork Stillaguamish River Basin	Remove culverts, unstable fill and cut slope material, and obliterate forest roads that are no longer needed.	USFS	SSLIO 10.2 Restoration	N-Continuation	CHIN2.5		
2018-0775	Stillaguamish Estuary Habitat and Chinook Resilience Project (Phase II)	Five years of monitoring at TNC's Port Susan Bay preserve indicate that the marsh ecosystem is rapidly eroding due to a combination of salinity stress, wind shear, and snow goose herbivory. Given that future climate projections indicate less freshwater availability to the Stillaguamish system in summer, salinity stress will likely increase both at TNC's preserve and along the entire Stillaguamish Delta face, including Leque Island and zis-a-ba. We will use a 3D hydrodynamic model as a foundation to assess the sequencing, cumulative impacts, habitat connectivity, and climate resilience of habitat and fish projects identified in the lower Stillaguamish Reach Scale Plan and the Stillaguamish Chinook Recovery Plan. Having a robust understanding of the habitat and fish needs for the lower delta will set the stage for more robust integration of fish, farm and flood risk reduction needs and interests to ensure restoration actions achieve the multi- interests and goals for the delta.	The Nature Conservancy	SSLIO 10.2 Restoration	N-Continuation	EST1.3	EST2.1	
2018-0681	USFS Fish Barrier Replacement - Palmer Creek on Forest Service Road 4065	Fish barrier will be replaced with a structure meeting the Forest Service Region 6 Aquatic Organism Passage Guidance.	US Forest Service	SSLIO 10.2 Restoration		CHIN 2.5		
2018-0870	Stillaguamish Valley Protection Initiative	The Stillaguamish Valley is home to a thriving commercial agricultural industry that is facing challenges associated with development pressure, increased flooding and sea level rise. A collaboration of partners, local farmers, land trusts, and the Conservation District will work with farmers to protect high priority farmland in the valley through removal of development rights. This valley was chosen as a focus for protection work through a farmland viability prioritization process that will be updated with forthcoming flood and groundwater level climate predictions. Funding requested will support outreach efforts to farmers, integration into multi-benefit floodplain planning efforts, and development of an easement funding strategy that allows for future flexibility of lands to be used for restoration. Funding will also support transaction costs such as appraisal fees that are normally passed on to the landowners making easements not economically feasible for smaller farms.	Snohomish Conservation District	SSLIO 02.1 Integrated Planning	Y-New project	FP3.2	EST3.2	LDC3.2
<b>Shellfish</b>								
2018-0848	Anaerobic digester system design - optimizing a new distillation approach to dairy manure processing for clean water and nutrient management	Advanced Vapor Recompression Distillation (AVRD) technology, being developed in the Puget Sound area, processes dairy manure into clean water and fertilizers. This system will largely remove the need for manure storage lagoons, thus eliminating the potential of fecal coliform contamination of surface waters and shellfish beds from lagoon overtopping or poor timing of manure application to fields. AVRD systems, however, have compressors and other equipment that consume lots of electricity, perhaps doubling a dairy's utility costs and potentially making this new technology economically infeasible. Installing compact anaerobic digesters would produce valuable biogas sufficient to power the dairy and the new manure processor. This new system will fit into a suite of multi-benefit BMPs at a dairy, allowing dairy owners to process fecal coliform and use nutrients properly and be resilient against climate changes to precipitation, soil saturation, and extreme weather.	Snohomish Conservation District	SSLIO 05.1 NP Source	Y-New project	SHELL1.9	SHELL1.4	

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2018-0833	Assessment of Animal Handling BMP Implementation on Non-Commercial Properties in Unincorporated Areas of Snohomish County within WRIAs 3 and 5.	Snohomish County (SC) and the Snohomish Conservation District (SCD) are proposing to assess the implementation of animal handling BMPs at non-commercial properties in unincorporated Snohomish County located in WRIAs 3 and 5. The assessment of BMPs will be conducted through desktop analysis (SC) and site visits (SCD). Semi-structured interviews will be conducted during site visits to document BMP implementation motivators and barriers. Statistics generated by SC and SCD (such as mean distance of manure pile to surface water/MS4, % presence of manure piles within critical areas (e.g., flood zones), % presence of animal exclusion device, and mean width of riparian buffer) will be utilized by Snohomish County to assist the revision of the animal handling BMPs in the County's Drainage Manual. The revision of the animal handling BMPs will help reduce the discharge of fecal coliform and other pollutants to waters of the state including the recently downgraded shellfish beds in Port Susan.	Snohomish County	SSLIO 05.1 NP Source	Y-New project	SHELL1.5	SHELL1.4	
2018-0958	Lower Stillaguamish PIC Phase III	Snohomish County will continue working with partner agencies to expand and enhance the Lower Stillaguamish Pollution Identification and Correction (PIC) effort to include additional focus areas for proactive targeted water quality monitoring, pollution source tracking, regulatory compliance coordination, education and outreach, technical assistance, and cost share incentives. This work will help Snohomish County fully implement the Port Susan Pollution Response Plan that the County will adopt and begin implementing in March 2018 as required by the Washington Department of Health due to the August 2017 downgrade of 190 acres of the Port Susan commercial shellfish growing area. This work will also contribute to preventing the South Skagit Bay commercial shellfish growing area from being downgraded from its current Approved but threatened status.	Snohomish County	SSLIO 05.1 NP Source	N-Continuation	SHELL1.3	SHELL1.5	SHELL1.4

Gap (Y/N)

Y=NTA that is addressing unfunded actions along the LIO Plan strategy logic.

N=NTA that is not addressing unfunded actions along the LIO Plan strategy logic.

**\*Note: NTA Reviewers will be asked to apply a geographic/locally based judgement of the NTA during their review of the alignment criteria.**

Link to LIO Ecosystem Recovery Plan: <https://snohomishcountywa.gov/DocumentCenter/View/44939>